

CLAIMS

What is claimed is:

1. A multi-layer bristle comprising:
an attachment end and a free end disposed along a longitudinal axis of the bristle;
a core layer constructed from a first material; and
at least one outer layer surrounding the core layer, the outer layer constructed from a second material, the second material being different from the first material.
2. A multi-layer bristle according to claim 1, wherein the core layer and the at least one outer layer are circular in cross section and concentric.
3. A broom fabricated with a plurality of bristles according to claim 1.
4. A multi-layer bristle according to claim 1, wherein the first material is adapted to provide structural support for the bristle.
5. A multi-layer bristle according to claim 1, wherein the second material includes a non-abrasive material.
6. A multi-layer bristle according to claim 1, wherein the second material includes an antimicrobial material.

7. A multi-layer bristle according to claim 1, wherein at least the first material or the second material includes one or more recycled materials.

8. A multi-layer bristle according to claim 1, wherein the second material includes electrostatic properties for attracting debris onto the bristle.

9. A multi-layer bristle according to claim 1, wherein the second material includes anti-electrostatic properties for repelling debris from the bristle.

10. A multi-layer bristle according to claim 1, wherein the second material includes hydrophilic properties to absorb water onto the bristle.

11. A multi-layer bristle according to claim 1, wherein the second material includes hydrophobic properties to repel water from the bristle.

12. A multi-layer bristle comprising:
an attachment end and a free end disposed along a longitudinal axis of the bristle;
a core layer; and
a plurality of outer layer segments attached to the core layer, wherein the plurality of outer layer segments are adapted to detach

from the core layer at the free end of the bristle to form a plurality of flagged tips at the free end of the bristle.

13. A multi-layer bristle according to claim 12, wherein the core layer includes at least a first material property and the outer layer includes at least a second material property, the first material property being different from the second material property.

14. A multi-layer bristle according to claim 12, wherein the core layer and the outer layer are shaped to provide a substantially circular cross section for the bristle.

15. A multi-layer bristle according to claim 12, wherein the outer layer is co-extruded with and surrounds the core layer.

16. A multi-layer bristle according to claim 12, comprising a resin adapted to attach the outer layer to the core layer, wherein the resin provides a weak bond to form the plurality of flagged tips.

17. A multi-layer bristle according to claim 12, wherein the outer layer includes a plurality of serrations from the free end to a distance on the outer layer along the longitudinal axis, wherein the outer layer detaches from the core layer at the serrations.

18. A broom fabricated with a plurality of bristles according to claim 12.

19. A method of manufacturing a multi-layer bristle comprising the steps of:

- providing a core layer material including a first material property to a co-extrusion die having a cross section corresponding to a cross section of the bristle, wherein a core layer of the bristle includes the core layer material;
- providing at least one outer layer material including a second material property to the co-extrusion die, the second material property being different from the first material property, wherein an outer layer of the bristle includes the outer layer material; and
- co-extruding the core layer material and the outer layer material through the co-extrusion die, the co-extruding step forming the bristle having an attachment end and a free end disposed along a longitudinal axis of the bristle.

20. The method of manufacturing a multi-layer bristle according to claim 19, further comprising the steps of:

- forming a plurality of serrations on the outer layer from the free end to a distance on the outer layer along the longitudinal axis, wherein the outer layer separates from the core layer at the serrations upon impact of the free end with a surface to provide a plurality of flagged tips at the free end.

21. The method of manufacturing a multi-layer bristle according to claim 19, further comprising providing a weak bond between

the outer layer and the core layer, wherein the outer layer separates from the core layer upon impact of the free end with a surface to provide a plurality of flagged tips at the free end.